

REMARKS

Applicants appreciate the Examiner's thorough consideration provided to the present application. Claims 1-6, 8, 11-14 and 17-21 are currently pending in the instant application. Claims 1, 8, 19 and 21 are independent. Claims 8 and 21 have been amended.

Claim Objection

Claim 8 has been objected to by the Examiner due to the presence of alleged informalities with the claim. This objection is respectfully traversed. In light of the foregoing amendment to the claims, this objection has been obviated and/or rendered moot.

However, Applicants submit that the requested changes do not appear to either raise a substantial question of the patentability of the claimed invention nor do they narrow the scope of the claimed invention.

Claim Rejections Under 35 U.S.C. § 112

Claim 21 has been rejected under 35 U.S.C. § 112, second paragraph as allegedly being indefinite. This rejection is respectfully traversed.

In light of the foregoing amendments to the claims, Applicants respectfully submit that these rejections have been obviated and/or rendered

moot. Applicants respectfully submit that the foregoing amendments have been made to merely clarify the claimed invention.

Without conceding the propriety of the Examiner's rejections, but merely to timely advance the prosecution of the application, Applicants have incorporated the changes recommended by the Examiner. Applicants submit that the requested changes do not appear to either raise a substantial question of the patentability of the claimed invention nor do they narrow the scope of the claimed invention.

Claim Rejections Under 35 U.S.C. § 103

Claims 1-4, 6, 8 and 11-14 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Harper (U.S. Patent No. 4,642,149) in view of Official Notice. Claims 5, 17-18 and 20 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Harper in view of Maniscalco (U.S. Patent No. 1,979,975). Claims 19 and 21 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Harper in view of Applicants' Alleged Admitted Prior Art. These rejections are respectfully traversed.

In light of the foregoing amendments to the claims, Applicants respectfully submit that all of the rejections have been obviated and/or rendered moot. Since the prior art of record fails to teach or suggest each and

every element of the claimed invention, the Examiner's rejections under 35 U.S.C. § 103(a) should be withdrawn.

The Examiner has admitted that Harper fails to teach or suggest a plurality of isolation and flow direction control plates. With respect to the Harper patent and the Examiner's comments relating to this reference, Applicants submit that one of ordinary skill in the art would not have found it obvious to simply add a second baffle plate (element 24 in Harper) as alleged by the Examiner. The baffle plate of Harper is specifically a "diametric baffle 24 [is] joined at its upper edge 26 to the peripheral wall 14 midway between the circumferentially spaced inlet and outlet openings." Since this is a "diametric" baffle plate, e.g., extending across the diameter of the heat exchanger of Harper, one of skill in the art could not have added a second baffle plate as alleged by the Examiner since there would not be room for a second diametric baffle plate within the Harper heat exchanger. Further, Harper is specifically aimed at creating only two separate chambers, e.g., arranged according to the two fluid flows (inlet and outlet) in the respective chambers. Accordingly, the Examiner has not identified a single reason as to why one of ordinary skill in the art would add a second baffle plate to the heat exchanger of Harper. Further, even if the heat exchanger of Harper could accommodate a second baffle plate as alleged by the Examiner, the heat exchanger would not function as originally intended by Harper.

The ex parte case of *In Re Harza* identified by the Examiner does not hold that parts can simply be duplicated to create valid § 103 rejections. The Examiner is still required to show that one of ordinary skill in the art would have had a reason (art recognized) or motivation to add a second baffle plate and that the device would still function as intended with the alleged modification. In the case of the Harper reference, one of ordinary skill in the art clearly would not have added a second diametric baffle plate since the device is only capable of accommodating a single plate and is specifically designed for use with only a single baffle plate. Accordingly, this rejection should be withdrawn.

With respect to Maniscalco, the Examiner has alleged that one of ordinary skill in the art would have added a U-shaped tube bundle to the heat exchanger of Harper. This assumption is respectfully traversed. First, Applicants request clarification as to how the heat exchanger of Harper would operate with a U-shaped tube bundle, particularly when the diametric baffle plate (element 24) of Harper clearly extends across the entire diameter of the device, e.g., see FIG. 1 in Harper. Further, the Examiner is reminded that the test for obviousness is not whether or not the additional features are available in the prior art, but whether or not it would have been obvious to add the feature to the prior art of record.

For example, a U-shaped tube bundle would not be desirable to add to the heat exchanger of Harper. As described by Harper, the inlet and outlet are clearly positioned at opposite ends of the heat exchanger (see Abstract and FIGs. 1-2). Therefore, straight tubes are more desirable in this application and a U-shaped tube bundle, e.g., having an inlet and an outlet on the same side of the device, is improper given the intended application, structure and arrangement of the Harper device. Accordingly, this rejection should be withdrawn.

With respect to the Examiner's rejection based upon Harper in view of Applicant's Alleged Admitted Prior Art, Applicants traverse this rejection. First, Applicants have not admitted that pages 1-3 of the present application, particularly those portions describing problems associated with the structure of the background art, qualify as prior art under 35 U.S.C. § 102. Accordingly, this rejection is improper.

The Examiner alleges that "Applicant's admission is it is well known in the art to employ a turbine connected in series to the shell side outlet of a heat exchanger. Since Harper and Applicant's admission are both from the same field of endeavor and/or analogous art, the purpose disclosed by Applicant's admission would have been recognized in the pertinent art of Harper." First, Applicants have not admitted that the structure on pages 1-3 of the present application qualifies as prior art under 35 U.S.C. § 102. Second, even if the

structure did qualify as prior art, that statement that "the purpose disclosed by Applicant's admission would have been recognized in the pertinent art of Harper" is unsubstantiated by the record. Specifically, Applicant's identification and analysis of problems associated with the background art may constitute as much a part of an invention as the solution itself. Accordingly, the Examiner's use of Applicant's disclosure is improper. Accordingly, this rejection should be withdrawn.

In contrast to the prior art of record, the claimed invention permits the creation of a series of cross-flow type heat exchangers 50 within a common heat exchanger assembly. The Examiner will appreciate that this controlled isolation of the shell side fluid flow permits a greater control of the individual stages (heat exchangers) created by the isolation and flow direction control plates. For example, the tube side fluid flow can actually be isolated by the claimed invention to include a variety of separate fluid mediums, e.g., a first fluid in a first tube bundle, a distinct, second fluid (liquid or gas) in a subsequent tube bundle, etc.

In accordance with the above discussion of the patents relied upon by the Examiner, Applicants respectfully submit that these documents, either in combination together or standing alone, fail to teach or suggest the invention as is set forth by the claims of the instant application.

Accordingly, reconsideration and withdrawal of the claim rejection are respectfully requested. Moreover, the Applicants respectfully submit that the instant application is in a condition for allowance.

As to the dependent claims, Applicants respectfully submit that these claims are allowable due to their dependence upon an allowable independent claim, as well as for additional limitations provided by these claims.

CONCLUSION

Since the remaining patents cited by the Examiner have not been utilized to reject the claims, but rather to merely show the state-of-the-art, no further comments are necessary with respect thereto.

Attached hereto is a marked-up version of the changes made to the application by this Amendment.

In the event there are any matters remaining in this application, the Examiner is invited to contact Matthew T. Shanley, Registration No. 47,074 at (703) 205-8000 in the Washington, D.C. area.

Docket No. 2929-0150P
Appl. No.: 09/874,538
Art Unit: 3743

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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Attachment: Version with Markings to Show Changes Made

MARKED-UP VERSION OF AMENDMENTS

IN THE CLAIMS:

The claims have been amended as follows:

8. (Thrice Amended) A method of controlling a fluid flow for a heat exchanger assembly, said heat exchanger assembly including a shell having a shell side fluid path; a plurality of tubes; a shell side fluid inlet; a shell side fluid outlet, wherein a shell side fluid is capable of flowing between said shell side fluid inlet and said shell side fluid outlet in said shell side fluid path extending therebetween; at least one tube side fluid inlet; at least one tube side fluid outlet, said tubes extending between said tube side fluid inlet and said tube side fluid outlet, wherein said shell side fluid path extending between said shell side inlet and said shell side fluid outlet is arranged in a cross flow fluid arrangement with respect to each of said tube side fluid inlets and said tubes; said method comprising:

creating a plurality of smaller heat exchangers by providing a plurality isolation and flow direction control [plate] plates in a shell side of the heat exchanger assembly, wherein each of said isolation and flow direction control plates includes at least one fluid slot for permitting the fluid flow to pass through said isolation and flow direction control plate, said fluid slots extending normal to said shell side fluid path and in parallel with said tubes; and

isolating and directing the fluid flow on the shell side of the heat exchanger assembly between each of said smaller heat exchangers.

21. (Amended) A method of controlling a fluid flow to a turbine assembly, wherein said turbine assembly includes an integral heat exchanger assembly, said heat exchanger assembly including a shell; a plurality of tubes; a shell side fluid inlet; a shell side fluid outlet; at least one tube side fluid inlet; at least one tube side fluid outlet; wherein said shell side fluid inlet and said shell side fluid outlet are arranged in a cross flow fluid path with respect to each of said tube side fluid inlets, said method comprising:

creating a plurality of smaller heat exchangers by providing at least one isolation and flow direction control plate in a shell side of the heat exchanger assembly, wherein each of said isolation and flow direction control plates includes at least one fluid slot for permitting the fluid flow to pass through said isolation and flow direction control plate;

isolating and directing the fluid flow on the shell side of the heat exchanger assembly between each of said smaller heat exchangers; and
operatively connecting said heat exchanger assembly to an inlet of a turbine assembly, said [fluid slots] at least one fluid slot of said isolation and flow direction control plate positioned adjacent to said inlet of the turbine assembly.